

REMARKS

Specification

1. Paragraph 91 is corrected as required.

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Claim Rejections - 35 USC § 112

2. Applicant has removed from the claims, the one remaining pair of references to "equivalent cell" which was inadvertently left in the claims following applicants' July 19, 2005 amendments. As noted, this is without prejudice to the 10 prosecution of any future applications.

3. When a cell is exposed to x-rays, it thereafter emits X-ray fluorescence energy. That energy emitted by the cell is what is being referred to as an "energy channel" of the cell. One may 15 also think of this as a type of "energy emission" by the fluoresced cell. The adjective "background data" is meant as a label to refer to energy emissions that result from a particular set of operations performed on the cell in combination with its being exposed to x-rays and then fluorescing.

20 This rejection is moot, however, since claims 1 and 62 have been amended herein to remove any reference to a "background data energy channel."

4,5. Claim 1 as amended clearly specifies the means for 25 obtaining and analyzing data. A "computerized apparatus" is specified which contains the calibration data and which is used for "deducing an identity, or measurement of concentration, of an

unknown concentration of said at least one element of interest in said fluid of interest." Claim 1 clearly specifies how the calibration data is obtained, namely, that this calibration data is obtained based on "a rate at which photons are detected to be emitted from said preconcentration cell based on a fluid of interest containing a known concentration of at least one element of interest being flowed at a known flow rate through said central flow interelectrode gap for a known period of time, a known voltage differential being applied across said electrodes, and said preconcentration cell being exposed to x-rays."

Claim Rejections - 35 USC § 103

6,7. Although examiner has misinterpreted Kump et al. and is incorrectly applying Kump to this case, applicant's amendments to claims 1 and 62 - which are made without prejudice to any future prosecutions based on thins case - further overcome this rejection based on Tran in combination with Kump.

In Kump, there is no cell of any sort being employed. It appears that in Kump, a fluid is first subjected to chemical treatment to separate out elements in the fluid, then the fluid is passed through a filter, then the filter is dried, and then the sediments on the filter are swabbed with a q-tip and subjected to total reflection XRF. As best as applicants can tell, examiner seems to be likening the filter to the preconcentration cell of applicants' invention, though a passive filter is very dissimilar to the cell employed where which is a very active, and carefully-specified device to which voltages are

applied, through which flow rates and time of flow are carefully controlled, etc.

As amended, independent system claim 1 now recites "a computerized apparatus comprising calibration data related to a rate at which photons are detected to be emitted from said preconcentration cell based on a fluid of interest containing a known concentration of at least one element of interest being flowed at a known flow rate through said central flow interelectrode gap for a known period of time, a known voltage differential being applied across said electrodes, and said preconcentration cell being exposed to x-rays; and said computerized apparatus deducing an identity, or measurement of concentration, of an unknown concentration of said at least one element of interest in said fluid of interest, based 15 on comparing said calibration data with test data related to a rate at which photons are detected to be emitted from said preconcentration cell based on said fluid of interest with said unknown concentration being flowed at a known flow rate through said central flow interelectrode gap for a known period of time, 20 a known voltage differential being applied across said electrodes, and said preconcentration cell being exposed to x-rays."

Independent method claim 62 is similarly-amended.

Applicant's disclosure, supported by much discussion and 25 detailed formulas, teaches how various parameters such as flow rate, time of flow, voltage applied, etc., relate to how much of an element of interest ends up being preconcentrated in the cell,

and in turn to what sort of fluorescence readings are detected after the cell is exposed to x-rays.

Kump does not use a cell, but simply sifts sediment onto a filter and then swabs the sediment for total reflection XRF (which is a very different XRF technique than is employed by applicants in their teaching). There is nothing in Kump that specifies rate of flow through the filter. There is nothing that specifies time of flow through the filter. There is no voltage applied. And there is no recognition that any of these is important, nor is it clear how any of these would apply to a passive filter such as that used in Kump. And, there is nothing to disclose or suggest how to use all of this data in combination, together with the fluoresced reading from the cell once it is exposed to x-rays, to deduce an identity, or measurement of concentration, of an unknown concentration of at least one element of interest in a fluid of interest, as disclosed in detail and claimed by applicants.

The particular amendments to claims 1 and 62 that are made herein are based on claims 38-43 and 98-103, which examiner has stated in point 34 are allowable. In particular, the flowing of the fluid through the cell at a specified rate, and with a known applied voltage, is recited as part of all of these allowable claims, and is now recited in the independent claims as well. There is nothing in Kump combined with Tran to disclose, suggest, or motivate any of these recitations.

As a result, claims 1 and 62, and therefore, all of their dependent claims, are allowable, and applicants respectfully

request allowance of all claims at this time.

8-33. All of the claims covered by these points are allowable, at the very least, by virtue of their dependence on allowable 5 claims 1 and 62. These points primarily reiterate examiner's last action. Applicants' July 19, 2005 reply, which is hereby incorporated by reference, stated why applicants do not agree with examiner on these points.

It is, however, not necessary at this time to resolve these 10 issues in order for the present case to be allowed. In view of the many delays that have already occurred in this "special" case, applicant's do not want to do anything that might cause further time to pass before this application is issued. But 15 applicants do again reiterate that they preserve the right to argue these issues in any future applications which may be based on this application, and that in applicants' view these issues related to the many further points of patentable distinctness contained in the dependent claims have not been resolved.

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Allowable Subject Matter

34-36. Applicants appreciate the indication of allowable subject matter, and note in particular that allowable claims 38-43 and 98-103 were utilized as the basis for amending claims 1 and 62.

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Response to Amendment

37-48. Applicants do not agree with most of what examiner has stated in these points, and much of this discussion has been

argued previously. However, these questions do not need to be resolved in order for this case to be allowed as amended, and again, time is of the essence to applicants in getting the present case issued.

5 Applicants will carefully consider examiner's arguments and the present claim set prior to submitting a continuation of this case, and any of these issues that may remain once the continuation is filed will be addressed at that time.

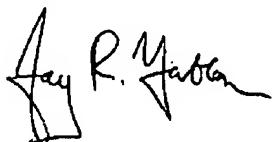
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Conclusion

As a result of the claims amendments herein and the foregoing discussion, applicants respectfully request allowance of all claims and look forward to a notice of allowance in the near future.

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Respectfully submitted,



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